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SEQUENCE LISTING

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<120> VR-OAC, AN OSMOTICALLY ACTIVATED CHANNEL PROTEIN, NUCLEIC ACIDS ENCODING IT, AND USES THEREOF

<130> 600-1-287N

<140> US 10/027,828

<141> 2001-10-25

<150> US 60/243,568

<151> 2000-10-26

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<170> PatentIn version 3.1

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35 40 45

Pro Ser Pro Ala Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
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Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
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Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
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Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
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Tyr Arg His His Ser Ser Asp Asn Lys Arg Trp Arg Lys Lys Ile Ile
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
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Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
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Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Pro Phe Leu Leu Thr His
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Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
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Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
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Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
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Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
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Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ala Arg Leu Phe Pro Asp Ser Asn Leu Glu Ala Val Leu Asn Asn
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Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
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Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Ala Ser
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Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
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Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe

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615

620

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Tyr Pro Ser Cys Arg Asp Ser Glu Thr Phe Ser Thr Phe Leu Leu Asp
660 665 670

Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu Met Leu Ser Ser
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Thr Lys Tyr Pro Val Val Phe Ile Ile Leu Leu Val Thr Tyr Ile Ile
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Leu Thr Phe Val Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
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Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
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Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asn Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Asn Glu Thr Tyr Gln Tyr Gly Phe Ser His Thr Val Gly Arg
805 810 815

Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
820 825 830

Asn Lys Asn Ser Asn Pro Asp Glu Val Val Val Pro Leu Asp Ser Met
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35 40 45

Pro Ser Pro Ala Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
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Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
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Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
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Tyr Arg His His Ser Ser Asp Asn Lys Arg Trp Arg Lys Lys Ile Ile
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Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Pro Phe Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
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Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
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Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
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Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
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Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
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Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
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Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ala Arg Leu Phe Pro Asp Ser Asn Leu Glu Ala Val Leu Asn Asn
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Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
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His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
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Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Ala Ser
420 425 430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
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Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
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485 490 495

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Gly Glu Val Ile Thr Leu Phe Thr Gly Val Leu Phe Phe Phe Thr Asn
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Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
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Ile Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

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565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
595 600 605 ;

Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
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Met Ile Gly Tyr Ala Ser Ala Leu Val Ser Leu Leu Asn Pro Cys Ala

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Asn Met Lys Val Cys Asn Glu Asp Gln Thr Asn Cys Thr Val Pro Thr
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Tyr Pro Ser Cys Arg Asp Ser Glu Thr Phe Ser Thr Phe Leu Leu Asp
660 665 670

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675 680 685

Thr Lys Tyr Pro Val Val Phe Ile Ile Leu Leu Val Thr Tyr Ile Ile
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Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Asn Glu Thr Tyr Gln Tyr Gly Phe Ser His Thr Val Gly Arg
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Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
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Asn Lys Asn Ser Asn Pro Asp Glu Val Val Val Pro Leu Asp Ser Met
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Gly Asn Pro Arg Cys Asp Gly His Gln Gln Gly Tyr Pro Arg Lys Trp
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Arg Thr Asp Asp Ala Pro Leu
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35 40 45

Leu Arg Asp Lys Trp Arg Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn
50 55 60

Val Val Ser Tyr Leu Cys Ala Met Val Ile Phe Thr Leu Thr Ala Tyr
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Tyr Gln Pro Leu Glu Gly Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val
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Asp Tyr Leu Arg Leu Ala Gly Glu Val Ile Thr Leu Leu Thr Gly Val
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Leu Phe Phe Phe Thr Ser Ile Lys Asp Leu Phe Met Lys Lys Cys Pro
115 120 125

Gly Val Asn Ser Leu Phe Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe
130 135 140

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Ile Glu Ala Tyr Leu Ala Val Met Val Phe Ala Leu Val Leu Gly Trp
165 170 175

Met Asn Ala Leu Tyr Phe Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr
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Ser Ile Met Ile Gln Lys Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu
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Leu Val Tyr Leu Leu Phe Met Ile Gly Tyr Ala Ser Ala Leu Val Thr
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Leu Leu Asn Pro Cys Thr Asn Met Lys Val Cys Asn Glu Asp Gln Ser
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Asn Cys Thr Val Pro Ser Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe
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Ser Ala Phe Leu Leu Asp Leu Phe Lys Leu Thr Ile Gly Met Gly Asp
260 265 270

Leu Glu Met Leu Ser Ser Ala Lys Tyr Pro Val Val Phe Ile Leu Leu
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Leu Val Thr Tyr Ile Ile Leu Thr Phe Val Leu Leu Asn Met Leu
290 295 300

Ile Ala Leu Met Gly Glu Thr Val Gly Gln Val Ser Lys Glu Ser Lys
305 310 315 320

His Ile Trp Lys Leu Gln Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg
325 330 335

Ser Phe Pro Val Phe Leu Arg Lys Ala Phe Arg Ser Gly Glu Met Val
340 345 350

Thr Val Gly Lys Ser Ser Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe
355 360 365

Arg Val Asp Glu Val Asn Trp Ser His Trp Asn Gln Asn Leu Gly Ile
370 375 380

Ile Asn Glu Asp Pro Gly Lys Ser Glu Ile Tyr Gln Tyr Tyr Gly Phe
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Ser His Thr Met Gly Arg Leu Arg Arg Asp Arg Trp Ser Ser Val Val

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415

Pro Arg Val Val Glu Leu Asn Lys Asn Ser Gly Thr Asp Glu Val Val
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Leu Ser Pro Val Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
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Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
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Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
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Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
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Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
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Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
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Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Tyr Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
305 310 315 320

Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
405 410 415

Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Val Ser
420 425 430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
435 440 445

Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
465 470 475 480

Ala Met Val Ile Phe Thr Leu Thr Ala Tyr Tyr Gln Pro Leu Glu Gly
485 490 495

Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
500 505 510

Gly Glu Val Ile Thr Leu Leu Thr Gly Val Leu Phe Phe Phe Thr Ser
515 520 525

Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
530 535 540

Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

Val Val Ser Ala Ala Leu Tyr Leu Ala Gly Ile Glu Ala Tyr Leu Ala
565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys

595	600	605
Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe		
610	615	620
Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr		
625	630	635
640		
Asn Met Lys Val Cys Asn Glu Asp Gln Ser Asn Cys Thr Val Pro Ser		
645	650	655
Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Asp		
660	665	670
Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu Met Leu Ser Ser		
675	680	685
Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Leu Val Thr Tyr Ile Ile		
690	695	700
Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu		
705	710	715
720		
Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln		
725	730	735
Trp Ala Thr Thr Gln Val Asn Trp Ser His Trp Asn Gln Asn Leu Gly		
740	745	750
Ile Ile Asn Glu Asp Pro Gly Lys Ser Glu Ile Tyr Gln Tyr Tyr Gly		
755	760	765
Phe Ser His Thr Met Gly Arg Leu Arg Arg Asp Arg Trp Ser Ser Val		
770	775	780
Val Pro Arg Val Val Glu Leu Asn Lys Asn Ser Gly Thr Asp Glu Val		
785	790	795
800		
Val Val Pro Leu Asp Asn Leu Gly Asn Pro Asn Cys Asp Gly His Gln		
805	810	815
Gln Gly Tyr Ala Pro Lys Trp Arg Ala Glu Asp Ala Pro Leu		
820	825	830

<210> 7
<211> 420
<212> PRT
<213> Rattus norvegicus

<400> 7

Tyr Gly Pro Val Tyr Ser Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr
1 5 10 15

Cys Gly Glu Glu Val Ser Val Leu Glu Ile Leu Val Tyr Asn Ser Lys
20 25 30

Ile Glu Asn Arg His Glu Met Leu Ala Val Glu Pro Ile Asn Glu Leu
35 40 45

Leu Arg Asp Lys Trp Arg Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn
50 55 60

Val Val Ser Tyr Leu Cys Ala Met Val Ile Phe Thr Leu Thr Ala Tyr
65 70 75 80

Tyr Gln Pro Leu Glu Gly Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val
85 90 95

Asp Tyr Leu Arg Leu Ala Gly Glu Val Ile Thr Leu Leu Thr Gly Val
100 105 110

Leu Phe Phe Phe Thr Ser Ile Lys Asp Leu Phe Met Lys Lys Cys Pro
115 120 125

Gly Val Asn Ser Leu Phe Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe
130 135 140

Ile Tyr Ser Val Leu Val Val Ser Ala Ala Leu Tyr Leu Ala Gly
145 150 155 160

Ile Glu Ala Tyr Leu Ala Val Met Val Phe Ala Leu Val Leu Gly Trp
165 170 175

Met Asn Ala Leu Tyr Phe Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr
180 185 190

Ser Ile Met Ile Gln Lys Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu
195 200 205

Leu Val Tyr Leu Leu Phe Met Ile Gly Tyr Ala Ser Ala Leu Val Thr
210 215 220

Leu Leu Asn Pro Cys Thr Asn Met Lys Val Cys Asn Glu Asp Gln Ser
225 230 235 240

Asn Cys Thr Val Pro Ser Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe
245 250 255

Ser Ala Phe Leu Leu Asp Leu Phe Lys Leu Thr Ile Gly Met Gly Asp
260 265 270

Leu Glu Met Leu Ser Ser Ala Lys Tyr Pro Val Val Phe Ile Leu Leu
275 280 285

Leu Val Thr Tyr Ile Ile Leu Thr Phe Val Leu Leu Leu Asn Met Leu
290 295 300

Ile Ala Leu Met Gly Glu Thr Val Gly Gln Val Ser Lys Glu Ser Lys
305 310 315 320

His Ile Trp Lys Leu Gln Trp Ala Thr Thr Glu Val Asn Trp Ser His
325 330 335

Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly Lys Ser Glu
340 345 350

Ile Tyr Gln Tyr Tyr Gly Phe Ser His Thr Met Gly Arg Leu Arg Arg
355 360 365

Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu Asn Lys Asn
370 375 380

Ser Gly Thr Asp Glu Val Val Val Pro Leu Asp Asn Leu Gly Asn Pro
385 390 395 400

Asn Cys Asp Gly His Gln Gln Gly Tyr Ala Pro Lys Trp Arg Ala Glu
405 410 415

Asp Ala Pro Leu

<210> 8
<211> 871
<212> PRT
<213> Rattus norvegicus

<400> 8

Met Ala Asp Pro Gly Asp Gly Pro Arg Ala Ala Pro Gly Asp Val Ala
1 5 10 15

Glu Pro Pro Gly Asp Glu Ser Gly Thr Ser Gly Gly Glu Ala Phe Pro
20 25 30

Leu Ser Ser Leu Ala Asn Leu Phe Glu Gly Glu Gly Ser Ser Ser
35 40 45

Leu Ser Pro Val Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
50 55 60

Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
65 70 75 80

Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
100 105 110

Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
130 135 140

Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Tyr Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
305 310 315 320

Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
405 410 415

Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Val Ser
420 425 430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
435 440 445

Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
465 470 475 480

Ala Met Val Ile Phe Thr Leu Thr Ala Tyr Tyr Gln Pro Leu Glu Gly
485 490 495

Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
500 505 510

Gly Glu Val Ile Thr Leu Leu Thr Gly Val Leu Phe Phe Phe Thr Ser
515 520 525

Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
530 535 540

Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

Val Val Ser Ala Ala Leu Tyr Leu Ala Gly Ile Glu Ala Tyr Leu Ala
565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
595 600 605

Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
610 615 620

Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr
625 630 635 640

Asn Met Lys Val Cys Asn Glu Asp Gln Ser Asn Cys Thr Val Pro Ser

645

650

655

Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Lys
660 665 670

Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu Met Leu Ser Ser
675 680 685

Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Leu Val Thr Tyr Ile Ile
690 695 700

Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
705 710 715 720

Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
740 745 750

Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Ser Glu Ile Tyr Gln Tyr Gly Phe Ser His Thr Met Gly Arg
805 810 815

Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
820 825 830

Asn Lys Asn Ser Gly Thr Asp Glu Val Val Val Pro Leu Asp Asn Leu
835 840 845

Gly Asn Pro Asn Cys Asp Gly His Gln Gln Gly Tyr Ala Pro Lys Trp
850 855 860

Arg Ala Glu Asp Ala Pro Leu
865 870

<210> 9
<211> 871
<212> PRT
<213> Rattus norvegicus

<400> 9

Met Ala Asp Pro Gly Asp Gly Pro Arg Ala Ala Pro Gly Asp Val Ala
1 5 10 15

Glu Pro Pro Gly Asp Glu Ser Gly Thr Ser Gly Gly Glu Ala Phe Pro
20 25 30

Leu Ser Ser Leu Ala Asn Leu Phe Glu Gly Glu Gly Ser Ser Ser
35 40 45

Leu Ser Pro Val Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
50 55 60

Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
65 70 75 80

Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
100 105 110

Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
130 135 140

Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Tyr Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
305 310 315 320

Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
405 410 415

Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Val Ser

420

425

430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
435 440 445

Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
465 470 475 480

Ala Met Val Ile Phe Thr Leu Thr Ala Tyr Tyr Gln Pro Leu Glu Gly
485 490 495

Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
500 505 510

Gly Glu Val Ile Thr Leu Leu Thr Gly Val Leu Phe Phe Phe Thr Ser
515 520 525

Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
530 535 540

Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

Val Val Ser Ala Ala Leu Tyr Leu Ala Gly Ile Glu Ala Tyr Leu Ala
565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
595 600 605

Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
610 615 620

Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr
625 630 635 640

Asn Met Lys Val Cys Asn Glu Asp Gln Ser Asn Cys Thr Val Pro Ser
645 650 655

Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Asp
660 665 670

Leu Phe Lys Leu Thr Ile Gly Met Gly Lys Leu Glu Met Leu Ser Ser
675 680 685

Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Leu Val Thr Tyr Ile Ile
690 695 700

Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
705 710 715 720

Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
740 745 750

Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Ser Glu Ile Tyr Gln Tyr Gly Phe Ser His Thr Met Gly Arg
805 810 815

Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
820 825 830

Asn Lys Asn Ser Gly Thr Asp Glu Val Val Val Pro Leu Asp Asn Leu
835 840 845

Gly Asn Pro Asn Cys Asp Gly His Gln Gln Gly Tyr Ala Pro Lys Trp
850 855 860

Arg Ala Glu Asp Ala Pro Leu
865 870

<210> 10
<211> 871
<212> PRT
<213> Rattus norvegicus

<400> 10

Met Ala Asp Pro Gly Asp Gly Pro Arg Ala Ala Pro Gly Asp Val Ala
1 5 10 15

Glu Pro Pro Gly Asp Glu Ser Gly Thr Ser Gly Gly Glu Ala Phe Pro
20 25 30

Leu Ser Ser Leu Ala Asn Leu Phe Glu Gly Glu Gly Ser Ser Ser
35 40 45

Leu Ser Pro Val Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
50 55 60

Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
65 70 75 80

Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
100 105 110

Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
130 135 140

Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Tyr Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp

195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
305 310 315 320

Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
405 410 415

Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Val Ser
420 425 430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
435 440 445

Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
465 470 475 480

Ala Met Val Ile Phe Thr Leu Thr Ala Tyr Tyr Gln Pro Leu Glu Gly
485 490 495

Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
500 505 510

Gly Glu Val Ile Thr Leu Leu Thr Gly Val Leu Phe Phe Phe Thr Ser
515 520 525

Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
530 535 540

Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

Val Val Ser Ala Ala Leu Tyr Leu Ala Gly Ile Glu Ala Tyr Leu Ala
565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
595 600 605

Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
610 615 620

Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr
625 630 635 640

Asn Met Lys Val Cys Asn Glu Asp Gln Ser Asn Cys Thr Val Pro Ser
645 650 655

Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Asp
660 665 670

Leu Phe Lys Leu Thr Ile Gly Lys Gly Asp Leu Glu Met Leu Ser Ser
675 680 685

Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Leu Val Thr Tyr Ile Ile
690 695 700

Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
705 710 715 720

Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
740 745 750

Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Ser Glu Ile Tyr Gln Tyr Gly Phe Ser His Thr Met Gly Arg
805 810 815

Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
820 825 830

Asn Lys Asn Ser Gly Thr Asp Glu Val Val Val Pro Leu Asp Asn Leu
835 840 845

Gly Asn Pro Asn Cys Asp Gly His Gln Gln Gly Tyr Ala Pro Lys Trp
850 855 860

Arg Ala Glu Asp Ala Pro Leu
865 870

<210> 11
<211> 871
<212> PRT
<213> Rattus norvegicus

<400> 11

Met Ala Asp Pro Gly Asp Gly Pro Arg Ala Ala Pro Gly Asp Val Ala
1 5 10 15

Glu Pro Pro Gly Asp Glu Ser Gly Thr Ser Gly Gly Glu Ala Phe Pro
20 25 30

Leu Ser Ser Leu Ala Asn Leu Phe Glu Gly Glu Gly Ser Ser Ser
35 40 45

Leu Ser Pro Val Asp Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
50 55 60

Pro Asn Leu Arg Met Lys Phe Gln Gly Ala Phe Arg Lys Gly Val Pro
65 70 75 80

Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
100 105 110

Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
130 135 140

Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Tyr Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
305 310 315 320

Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
405 410 415

Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu Val Ser
420 425 430

Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
435 440 445

Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys Trp Arg
450 455 460

Lys Phe Gly Ala Val Ser Phe Tyr Ile Asn Val Val Ser Tyr Leu Cys
465 470 475 480

Ala Met Val Ile Phe Thr Leu Thr Ala Tyr Tyr Gln Pro Leu Glu Gly
485 490 495

Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
500 505 510

Gly Glu Val Ile Thr Leu Leu Thr Gly Val Leu Phe Phe Phe Thr Ser
515 520 525

Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser Leu Phe
530 535 540

Val Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val Leu Val
545 550 555 560

Val Val Ser Ala Ala Leu Tyr Leu Ala Gly Ile Glu Ala Tyr Leu Ala
565 570 575

Val Met Val Phe Ala Leu Val Leu Gly Trp Met Asn Ala Leu Tyr Phe
580 585 590

Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
595 600 605

Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
610 615 620

Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr
625 630 635 640

Asn Met Lys Val Cys Asn Glu Asp Gln Ser Asn Cys Thr Val Pro Ser
645 650 655

Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Asp
660 665 670

Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu Met Leu Ser Ser
675 680 685

Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Val Thr Tyr Ile Ile
690 695 700

Leu Thr Phe Val Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
705 710 715 720

Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
740 745 750

Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Lys Ser Glu Ile Tyr Gln Tyr Gly Phe Ser His Thr Met Gly Arg
805 810 815

Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu
820 825 830

Asn Lys Asn Ser Gly Thr Asp Glu Val Val Val Pro Leu Asp Asn Leu
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Arg Ala Glu Asp Ala Pro Leu
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35 40 45

Tyr Pro Arg Trp Thr Ala Ser Arg Pro Ala Gly Pro Gly Asp Gly Arg
50 55 60

Pro Asn Leu Arg Met Lys Phe Arg Ser Ala Phe Arg Lys Gly Val Pro
65 70 75 80

Asn Pro Ile Asp Leu Leu Glu Ser Thr Leu Tyr Glu Ser Ser Val Val
85 90 95

Pro Gly Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr Gly Thr
100 105 110

Tyr Arg His His Pro Ser Asp Asn Lys Arg Trp Arg Arg Lys Val Val
115 120 125

Glu Lys Gln Pro Gln Ser Pro Lys Ala Pro Ala Pro Gln Pro Pro Pro
130 135 140

Ile Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val Ser Arg
145 150 155 160

Gly Ser Thr Ala Asp Leu Asp Gly Leu Leu Ser Phe Leu Leu Thr His
165 170 175

Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr Gly Lys
180 185 190

Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Asn Gly Arg Asn Asp
195 200 205

Thr Ile Pro Val Leu Leu Asp Ile Ala Glu Arg Thr Gly Asn Met Arg
210 215 220

Glu Phe Ile Asn Ser Pro Phe Arg Asp Ile Tyr Tyr Arg Gly Gln Thr
225 230 235 240

Ser Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val Glu Leu
245 250 255

Leu Val Ala Gln Gly Ala Asp Val His Ala Gln Ala Arg Gly Arg Phe
260 265 270

Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu Leu Pro
275 280 285

Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val Asn Tyr Leu
290 295 300

Thr Glu Asn Pro His Lys Lys Ala Asp Met Arg Arg Gln Asp Ser Arg
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Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn Thr Arg
325 330 335

Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu Lys
340 345 350

Cys Ser Arg Leu Phe Pro Asp Ser Asn Leu Glu Thr Val Leu Asn Asn
355 360 365

Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys Ile Gly
370 375 380

Val Phe Gln His Ile Ile Arg Arg Glu Val Thr Asp Glu Asp Thr Arg
385 390 395 400

His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val Tyr Ser
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Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg His Glu
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Thr Pro Pro Tyr Pro Tyr Arg Thr Thr Val Asp Tyr Leu Arg Leu Ala
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Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile Gln Lys
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Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu Leu Phe
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Met Ile Gly Tyr Ala Ser Ala Leu Val Thr Leu Leu Asn Pro Cys Thr
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Tyr Pro Ala Cys Arg Asp Ser Glu Thr Phe Ser Ala Phe Leu Leu Asp
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675 680 685

Ala Lys Tyr Pro Val Val Phe Ile Leu Leu Leu Val Thr Tyr Ile Ile
690 695 700

Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu
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Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys Leu Gln
725 730 735

Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Val Phe Leu
740 745 750

Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys Ser Ser
755 760 765

Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu Val Asn
770 775 780

Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn Glu Asp Pro Gly
785 790 795 800

Ser Glu Ile Tyr Gln Tyr Gly Phe Ser His Thr Val Gly Arg Leu
805 810 815

Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg Val Val Glu Leu Asn
820 825 830

Lys Asn Ser Ser Ala Asp Glu Val Val Val Pro Leu Asp Asn Leu Gly
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Thr Asp Asp Ala Pro Leu
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<400> 15

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Gly Lys Gln Asn Leu Arg Met Lys Phe His Gly Ala Phe Arg Lys Gly
50 55 60

Pro Pro Lys Pro Met Glu Leu Leu Glu Ser Thr Ile Tyr Glu Ser Ser
65 70 75 80

Val Val Pro Ala Pro Lys Lys Ala Pro Met Asp Ser Leu Phe Asp Tyr
85 90 95

Gly Thr Tyr Arg Gln His Pro Ser Glu Asn Lys Arg Trp Arg Arg Arg
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Val Val Glu Lys Pro Val Ala Gly Thr Lys Gly Pro Ala Pro Asn Pro
115 120 125

Pro Pro Val Leu Lys Val Phe Asn Arg Pro Ile Leu Phe Asp Ile Val
130 135 140

Ser Arg Gly Ser Pro Asp Gly Leu Glu Gly Leu Leu Ser Phe Leu Leu
145 150 155 160

Thr His Lys Lys Arg Leu Thr Asp Glu Glu Phe Arg Glu Pro Ser Thr
165 170 175

Gly Lys Thr Cys Leu Pro Lys Ala Leu Leu Asn Leu Ser Ala Gly Arg
180 185 190

Asn Asp Thr Ile Pro Ile Leu Leu Asp Ile Ala Glu Lys Thr Gly Asn
195 200 205

Met Arg Glu Phe Ile Asn Ser Pro Phe Arg Asp Val Tyr Tyr Arg Gly
210 215 220

Gln Thr Ala Leu His Ile Ala Ile Glu Arg Arg Cys Lys His Tyr Val
225 230 235 240

Glu Leu Leu Val Glu Lys Gly Ala Asp Val His Ala Gln Ala Arg Gly
245 250 255

Arg Phe Phe Gln Pro Lys Asp Glu Gly Gly Tyr Phe Tyr Phe Gly Glu
260 265 270

Leu Pro Leu Ser Leu Ala Ala Cys Thr Asn Gln Pro His Ile Val His
275 280 285

Tyr Leu Thr Glu Asn Gly His Lys Gln Ala Asp Leu Arg Arg Gln Asp
290 295 300

Ser Arg Gly Asn Thr Val Leu His Ala Leu Val Ala Ile Ala Asp Asn
305 310 315 320

Thr Arg Glu Asn Thr Lys Phe Val Thr Lys Met Tyr Asp Leu Leu Leu
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Ile Lys Cys Ala Lys Leu Phe Pro Asp Thr Asn Leu Glu Ala Leu Leu
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Asn Asn Asp Gly Leu Ser Pro Leu Met Met Ala Ala Lys Thr Gly Lys
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Ile Gly Ile Phe Gln His Ile Ile Arg Arg Glu Ile Ala Asp Glu Asp
370 375 380

Val Arg His Leu Ser Arg Lys Phe Lys Asp Trp Ala Tyr Gly Pro Val
385 390 395 400

Tyr Ser Ser Leu Tyr Asp Leu Ser Ser Leu Asp Thr Cys Gly Glu Glu
405 410 415

Val Ser Val Leu Glu Ile Leu Val Tyr Asn Ser Lys Ile Glu Asn Arg
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His Glu Met Leu Ala Val Glu Pro Ile Asn Glu Leu Leu Arg Asp Lys
435 440 445

Trp Arg Lys Phe Gly Ala Val Ser Phe Tyr Ile Ser Val Val Ser Tyr
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465 470 475 480

Glu Gly Pro Pro Pro Tyr Pro Tyr Thr Thr Thr Ile Asp Tyr Leu Arg
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Leu Ala Gly Glu Ile Ile Thr Leu Leu Thr Gly Ile Leu Phe Phe Phe
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Ser Asn Ile Lys Asp Leu Phe Met Lys Lys Cys Pro Gly Val Asn Ser
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Phe Phe Ile Asp Gly Ser Phe Gln Leu Leu Tyr Phe Ile Tyr Ser Val
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Tyr Phe Thr Arg Gly Leu Lys Leu Thr Gly Thr Tyr Ser Ile Met Ile
580 585 590

Gln Lys Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val Tyr Leu
595 600 605

Leu Phe Met Ile Gly Tyr Ala Ser Ala Leu Val Ser Leu Leu Asn Pro
610 615 620

Cys Pro Ser Ser Glu Ser Cys Ser Glu Asp His Ser Asn Cys Thr Leu
625 630 635 640

Pro Thr Tyr Pro Ser Cys Arg Asp Ser Gln Thr Phe Ser Thr Phe Leu
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Leu Asp Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu Met Leu
660 665 670

Glu Ser Ala Lys Tyr Pro Gly Val Phe Ile Ile Leu Leu Val Thr Tyr
675 680 685

Ile Ile Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala Leu Met
690 695 700

Gly Glu Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile Trp Lys
705 710 715 720

Leu Gln Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe Pro Leu
725 730 735

Phe Leu Arg Arg Ala Phe Arg Ser Gly Glu Met Val Thr Val Gly Lys
740 745 750

Gly Thr Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val Asp Glu
755 760 765

Val Asn Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Ser Glu Asp
770 775 780

Pro Gly Lys Ser Asp Thr Tyr Gln Tyr Tyr Gly Phe Ser His Thr Val
785 790 795 800

Gly Arg Leu Arg Arg Asp Arg Trp Ser Thr Val Val Pro Arg Val Val
805 810 815

Glu Leu Asn Lys Ser Cys Pro Thr Glu Asp Val Val Pro Leu Gly
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ctccactcat gatggctgcc aagactggca agatcggtt cttccagcac atcatccgcc 1260
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gccccgtcta ctcctcactc tacgatctct ctcactgga tacctgcggg gaggaggtgt 1380
ccgtgttggaa gatcctcggtt tacaacagca agattgagaa ccgccatgag atgttggccg 1440
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acatcagcgt ggtctcctac ctctgtgccaa tgatcatctt caccctcatc gcctattacc 1560
gccccatgga aggccccca ccgtacccctt acactacaac catcgactac ctgcggctgg 1620
ccggggagat catcaccctc ctcaccggca tcctttctt cttctccaaat atcaaagatc 1680

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aggcttacct	ggctgtcatg	gtctttgctt	tggcctggg	ctggatgaat	gcgctctact	1860
tcacgcgagg	gctcaagctg	acggggacct	acagcatcat	gatccagaag	atcctttca	1920
aagacctgtt	ccgcttcctc	ctggtctatc	tgctattcat	gattggctac	gcctcagcac	1980
tggtgtccct	cctgaacccg	tgtcccagc	gcgagtcctg	cagtgaggat	cactccaact	2040
gcacgctgcc	cacctacccc	tcatgccggg	acagtcagac	ttcagcacc	ttcctgcttgc	2100
acctcttcaa	gctcaccatt	ggcatgggtg	acctggagat	gctggagagt	gc当地tacc	2160
ctggtgtctt	catcatcctg	cttgtcacct	acatcatcct	cacccctcg	ctgctcctca	2220
acatgctcat	cgcctcatg	ggtgagacag	tggccaggt	gtccaaggag	agcaaacaca	2280
tctggaagtt	gcagtggcc	accaccatcc	tggacatcga	gctcccttc	cctctttcc	2340
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ctgaccgccc	ctggtgcttc	agggtggatg	aggtgaactg	gtcccactgg	aaccagaacc	2460
tgggcatcat	cagcgaggac	ccggcaaga	gacactta	ccagta	ggcttctccc	2520
ataccgtggg	gcggctgcgg	agagatcgat	ggtcaacgg	ggtgccacgc	gtggggagc	2580
tcaacaagag	ctgcccacg	gaggatgtgg	ttgtgccatt	ggggaccatg	ggcacggcag	2640
aggcgccgg	gcgacgacac	ggcagaccc	ccagctcccc	actctagcat	ggactctgcc	2700
tggccccaca	gcaccagtgt	gtgtctgttc	ctcaggatt	tgtgcagcca	gcgtccctgc	2760
agtgc	ccattgggt	cccagtcctg	gcaatgctgg	gggtctccgg	tgccaccgct	2820
ttgtttcct	gcaccattgg	ctgcattgcg	ccagcagctg	ggtgctggg	gctccctgc	2880
caccaaccac	cacaagccaa	tggctttgc	cccaagg	ggtttgg	tttttttt	2940
ggggggggaaa	gatttatacg	actatttatt	tcataataaa	gagcagccac	cacgaaaaaaa	3000
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	3060
aaaaaaaaaa						3068

<210> 17
 <211> 707
 <212> PRT
 <213> Rattus norvegicus

<400> 17

Ala Gly Glu Lys Pro Pro Arg Leu Tyr Asp Arg Arg Ser Ile Phe Asp

1

5

10

15

Ala Val Ala Gln Ser Asn Cys Gln Glu Leu Glu Ser Leu Leu Pro Phe
20 25 30

Leu Gln Arg Ser Lys Lys Arg Leu Thr Asp Ser Glu Phe Lys Asp Pro
35 40 45

Glu Thr Gly Lys Thr Cys Leu Leu Lys Ala Met Leu Asn Leu His Asn
50 55 60

Gly Gln Asn Asp Thr Ile Ala Leu Leu Leu Asp Val Ala Arg Lys Thr
65 70 75 80

Asp Ser Leu Lys Gln Phe Val Asn Ala Ser Tyr Thr Asp Ser Tyr Tyr
85 90 95

Lys Gly Gln Thr Ala Leu His Ile Ala Ile Glu Arg Arg Asn Met Thr
100 105 110

Leu Val Thr Leu Leu Val Glu Asn Gly Ala Asp Val Gln Ala Ala Ala
115 120 125

Asn Gly Asp Phe Phe Lys Lys Thr Lys Gly Arg Pro Gly Phe Tyr Phe
130 135 140

Gly Glu Leu Pro Leu Ser Leu Ala Ala Cys Thr Asn Gln Leu Ala Ile
145 150 155 160

Val Lys Phe Leu Leu Gln Asn Ser Trp Gln Pro Ala Asp Ile Ser Ala
165 170 175

Arg Asp Ser Val Gly Asn Thr Val Leu His Ala Leu Val Glu Val Ala
180 185 190

Asp Asn Thr Val Asp Asn Thr Lys Phe Val Thr Ser Met Tyr Asn Glu
195 200 205

Ile Leu Ile Leu Gly Ala Lys Leu His Pro Thr Leu Lys Leu Glu Glu
210 215 220

Ile Thr Asn Arg Lys Gly Leu Thr Pro Leu Ala Leu Ala Ser Ser
225 230 235 240

Gly Lys Ile Gly Val Leu Ala Tyr Ile Leu Gln Arg Glu Ile His Glu
245 250 255

Pro Glu Cys Arg His Leu Ser Arg Lys Phe Thr Glu Trp Ala Tyr Gly
260 265 270

Pro Val His Ser Ser Leu Tyr Asp Leu Ser Cys Ile Asp Thr Cys Glu
275 280 285

Lys Asn Ser Val Leu Glu Val Ile Ala Tyr Ser Ser Ser Glu Thr Pro
290 295 300

Asn Arg His Asp Met Leu Leu Val Glu Pro Leu Asn Arg Leu Leu Gln
305 310 315 320

Asp Lys Trp Asp Arg Phe Val Lys Arg Ile Phe Tyr Phe Asn Phe Phe
325 330 335

Val Tyr Cys Leu Tyr Met Ile Ile Phe Thr Ala Ala Ala Tyr Tyr Arg
340 345 350

Pro Val Glu Gly Leu Pro Pro Tyr Lys Leu Lys Asn Thr Val Gly Asp
355 360 365

Tyr Arg Val Thr Gly Glu Ile Leu Ser Val Ser Gly Gly Val Tyr Phe
370 375 380

Phe Phe Arg Gly Ile Gln Tyr Phe Leu Gln Arg Arg Pro Ser Leu Lys
385 390 395 400

Ser Leu Phe Val Asp Ser Tyr Ser Glu Ile Leu Phe Phe Val Gln Ser
405 410 415

Leu Phe Met Leu Val Ser Val Val Leu Tyr Phe Ser Gln Arg Lys Glu
420 425 430

Tyr Val Ala Ser Met Val Phe Ser Leu Ala Met Gly Trp Thr Asn Met
435 440 445

Leu Tyr Tyr Thr Arg Gly Phe Gln Gln Met Gly Ile Tyr Ala Val Met
450 455 460

Ile Glu Lys Met Ile Leu Arg Asp Leu Cys Arg Phe Met Phe Val Tyr
465 470 475 480

Leu Val Phe Leu Phe Gly Phe Ser Thr Ala Val Val Thr Leu Ile Glu
485 490 495

Asp Gly Lys Asn Asn Ser Leu Pro Met Glu Ser Thr Pro His Lys Cys
500 505 510

Arg Gly Ser Ala Cys Lys Gly Asn Ser Tyr Asn Ser Leu Tyr Ser Thr
515 520 525

Cys Leu Glu Leu Phe Lys Phe Thr Ile Gly Met Gly Asp Leu Glu Phe
530 535 540

Thr Glu Asn Tyr Asp Phe Lys Ala Val Phe Ile Ile Leu Leu Leu Ala
545 550 555 560

Tyr Val Ile Leu Thr Tyr Ile Leu Leu Leu Asn Met Leu Ile Ala Leu
565 570 575

Met Gly Glu Thr Val Asn Lys Ile Ala Gln Glu Ser Lys Asn Ile Trp
580 585 590

Lys Leu Gln Arg Ala Ile Thr Ile Leu Asp Thr Glu Lys Ser Phe Leu
595 600 605

Lys Cys Met Arg Lys Ala Phe Arg Ser Gly Lys Leu Leu Gln Val Gly
610 615 620

Phe Thr Pro Asp Gly Lys Asp Asp Tyr Arg Trp Cys Phe Arg Val Asp
625 630 635 640

Glu Val Asn Trp Thr Trp Asn Thr Asn Val Gly Ile Ile Asn Glu
645 650 655

Asp Pro Gly Asn Cys Gly Val Lys Arg Thr Leu Ser Phe Ser Leu Arg
660 665 670

Ser Gly Arg Val Ser Gly Arg Asn Trp Lys Asn Pro Leu Leu Arg Asp
675 680 685

Ala Ser Thr Arg Asp Arg His Ala Thr Gln Gln Glu Glu Val Gln Leu
690 695 700

Lys His Tyr
705

<210> 18
<211> 665
<212> PRT
<213> Rattus norvegicus

<400> 18

Asp Arg Phe Asp Arg Asp Arg Leu Phe Ser Val Val Ser Arg Gly Val
1 5 10 15

Pro Glu Glu Leu Thr Gly Leu Leu Glu Tyr Leu Arg Trp Asn Ser Lys
20 25 30

Tyr Leu Thr Asp Ser Ala Tyr Thr Glu Gly Ser Thr Gly Lys Thr Cys
35 40 45

Leu Met Lys Ala Val Leu Asn Leu Gln Asp Gly Val Asn Ala Cys Ile
50 55 60

Met Pro Leu Leu Gln Ile Asp Lys Asp Ser Gly Asn Pro Lys Pro Leu
65 70 75 80

Val Asn Ala Gln Cys Thr Asp Glu Phe Tyr Gln Gly His Ser Ala Leu
85 90 95

His Ile Ala Ile Glu Lys Arg Ser Leu Gln Cys Val Lys Leu Leu Val
100 105 110

Glu Asn Gly Ala Asp Val His Leu Arg Ala Cys Gly Arg Phe Phe Gln
115 120 125

Lys His Gln Gly Thr Cys Phe Tyr Phe Gly Glu Leu Pro Leu Ser Leu
130 135 140

Ala Ala Cys Thr Lys Gln Trp Asp Val Val Thr Tyr Leu Leu Glu Asn
145 150 155 160

Pro His Gln Pro Ala Ser Leu Glu Ala Thr Asp Ser Leu Gly Asn Thr
165 170 175

Val Leu His Ala Leu Val Met Ile Ala Asp Asn Ser Pro Glu Asn Ser
180 185 190

Ala Leu Val Ile His Met Tyr Asp Gly Leu Leu Gln Met Gly Ala Arg
195 200 205

Leu Cys Pro Thr Val Gln Leu Glu Glu Ile Ser Asn His Gln Gly Leu
210 215 220

Thr Pro Leu Lys Leu Ala Ala Lys Glu Gly Lys Ile Glu Ile Phe Arg
225 230 235 240

His Ile Leu Gln Arg Glu Phe Ser Gly Pro Tyr Gln Pro Leu Ser Arg
245 250 255

Lys Phe Thr Glu Trp Cys Tyr Gly Pro Val Arg Val Ser Leu Tyr Asp
260 265 270

Leu Ser Ser Val Asp Ser Trp Glu Lys Asn Ser Val Leu Glu Ile Ile
275 280 285

Ala Phe His Cys Lys Ser Pro Asn Arg His Arg Met Val Val Leu Glu
290 295 300

Pro Leu Asn Lys Leu Leu Gln Glu Lys Trp Asp Arg Leu Val Ser Arg
305 310 315 320

Phe Phe Phe Asn Phe Ala Cys Tyr Leu Val Tyr Met Phe Ile Phe Thr
325 330 335

Val Val Ala Tyr His Gln Pro Ser Leu Asp Gln Pro Pro Ser Ser Lys
340 345 350

Ala Thr Phe Gly Glu Ser Met Leu Leu Leu Gly His Ile Leu Ile Leu
355 360 365

Leu Gly Gly Ile Tyr Leu Leu Leu Gly Gln Leu Trp Tyr Phe Trp Arg
370 375 380

Arg Leu Phe Ile Trp Ile Ser Phe Met Asp Ser Tyr Phe Glu Ile Leu
385 390 395 400

Phe Leu Leu Gln Ala Leu Leu Thr Val Leu Ser Gln Val Leu Arg Phe
405 410 415

Met Glu Thr Glu Trp Tyr Leu Pro Leu Leu Val Leu Ser Leu Val Leu
420 425 430

Gly Trp Leu Asn Leu Leu Tyr Tyr Thr Arg Gly Phe Gln His Thr Gly
435 440 445

Ile Tyr Ser Val Met Ile Gln Lys Val Ile Leu Arg Asp Leu Arg Phe
450 455 460

Leu Leu Val Tyr Leu Val Phe Leu Phe Gly Phe Ala Val Ala Leu Val
465 470 475 480

Ser Leu Ser Arg Glu Ala Arg Ser Pro Lys Ala Pro Glu Asp Asn Asn
485 490 495

Ser Thr Val Thr Glu Gln Pro Thr Val Gly Gln Glu Pro Tyr Arg Ser
500 505 510

Ile Leu Asp Ala Ser Leu Glu Leu Phe Lys Phe Thr Ile Gly Met Gly
515 520 525

Glu Leu Ala Phe Gln Glu Gln Leu Arg Phe Arg Gly Val Val Leu Leu
530 535 540

Leu Leu Leu Ala Tyr Val Leu Leu Thr Tyr Val Leu Leu Leu Asn Met
545 550 555 560

Leu Ile Ala Leu Met Ser Glu Thr Val Asn His Val Ala Asp Asn Ser
565 570 575

Trp Ser Ile Trp Lys Leu Gln Lys Ala Ile Ser Val Leu Glu Met Glu
580 585 590

Asn Gly Tyr Trp Trp Cys Arg Arg Lys Lys His Arg Glu Gly Arg Leu
595 600 605

Leu Lys Val Gly Thr Arg Gly Asp Gln Thr Pro Asp Glu Arg Trp Cys
610 615 620

Phe Arg Val Glu Glu Val Asn Trp Ala Ala Trp Glu Lys Thr Leu Pro
625 630 635 640

Thr Leu Ser Glu Asp Pro Ser Gly Pro Gly Ile Thr Gly Asn Lys Lys
645 650 655

Asn Pro Thr Ser Ile Lys Pro Gly Lys
660 665

<210> 19
<211> 644
<212> PRT
<213> *Caenorhabditis elegans*

<400> 19

Arg Phe Lys Glu His Tyr Ala Leu Trp Lys Leu Asn Lys Arg Gly Val
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Glu Gly Glu Asn Leu Ile His Leu Leu Leu Asn Arg Glu Gln Gln Val
20 25 30

Cys Tyr Glu Ile Ala Arg Ile Leu Leu Lys Arg Phe Pro Gly Met Ala
35 40 45

Asn Asp Ile Tyr Leu Gly Asp Glu Gln Phe Gly Gln Ser Ala Leu His
50 55 60

Leu Ala Ile Val His Asp Asp Tyr Glu Thr Val Ser Leu Leu Leu Asn
65 70 75 80

Ser Lys Ala Asp Val Asn Ala Arg Ala Cys Gly Asn Phe Phe Leu Pro
85 90 95

Glu Asp Phe Lys Leu Thr Asn Lys Ile Thr Asp Tyr Glu Gln Gly Tyr Ala
100 105 110

Tyr Tyr Gly Glu Tyr Pro Leu Ala Phe Ala Ala Cys Phe Gly Asn Lys
115 120 125

Asp Ile Tyr Asp Leu Leu Ile Gln Phe Gly Ala Asn Pro Asn Leu Gln
130 135 140

Asp Ser Phe Gly Asn Thr Ile Leu His Met Cys Val Ile Asn Tyr Ser
145 150 155 160

Ser Ser Met Tyr Ser Tyr Ala Val Arg His Trp Ala Lys Pro Ala Asp
165 170 175

Pro His Val Val Asn His Ala Gly Phe Thr Pro Leu Thr Leu Ala Thr
180 185 190

Lys Leu Gly Arg Lys Gln Ile Phe Glu Glu Met Leu Glu Ile Met Lys
195 200 205

Val Glu Phe Trp Arg Phe Ser Asp Met Thr Cys Ser Ala Tyr Pro Leu
210 215 220

Asn Thr Leu Asp Thr Ile Gln Pro Asp Gly Ser Thr Asn Tyr Asp Ser
225 230 235 240

Ala Leu Met Thr Val Ile Asn Gly Ser Thr Pro Glu His Leu Asp Met
245 250 255

Ile Gly Ser Glu Val Ile Gln Arg Leu Leu Ala Asp Lys Trp Lys Ala
260 265 270

Phe Ala Gln Arg Lys Leu Ile Glu Arg Leu Val Leu Ile Val Gln
275 280 285

Leu Ile Thr Leu Ser Ile Val Val Tyr Ile Arg Pro Thr Glu Leu Pro
290 295 300

Arg Leu Tyr Met Glu Asp Pro Gln Trp Asp Asp Tyr Ile Arg Thr Ala
305 310 315 320

Cys Glu Leu Leu Thr Ile Leu Asn Cys Ile Phe Phe Val Gly Tyr Gln
325 330 335

Gln Leu Gly Glu Ile Arg Thr Gln Gly Met Arg Gly Tyr Leu Arg Asn
340 345 350

Leu Lys Thr Ala Pro Ala Lys Ala Val Phe Cys Ile Ala Asn Leu Phe
355 360 365

Leu Leu Leu Cys Ile Pro Phe Arg Leu Met Lys Lys His Glu Ile Glu
370 375 380

Glu Ala Leu Phe Val Phe Ala Leu Pro Gly Ser Trp Ile Phe Leu Leu
385 390 395 400

Phe Phe Ala Arg Ser Ala Lys Leu Thr Gly Pro Phe Val Gln Met Ile
405 410 415

Tyr Ser Met Ile Ala Gly Asp Met Ile Arg Phe Ala Ile Ile Ser Ala
420 425 430

Ile Phe Leu Val Ser Phe Ser Gln Val Phe Tyr Phe Val Gly Lys Asp
435 440 445

Met Asp Ala Lys Gln Lys Leu Glu Asp Thr Asn Pro His Ala Cys Arg
450 455 460

Ile Ser Gly Tyr Thr Ile Tyr Thr Tyr Asn Thr Phe Pro Glu Thr Phe
465 470 475 480

Ile Thr Leu Phe Arg Ala Ser Met Gly Gly Tyr Asp Tyr Glu Glu Phe
485 490 495

Ser Cys Ala Asn Tyr Gln Ala Leu Thr Lys Thr Leu Phe Val Leu Tyr
500 505 510

Met Phe Val Met Pro Ile Met Met Ile Asn Ile Leu Ile Ala Met Met
515 520 525

Gly Asn Thr Tyr Thr Thr Val Ile Ala Gln Ala Glu Lys Ala Trp Arg
530 535 540

Gln Gln Tyr Ala Gln Ile Val Met Val Leu Glu Arg Ser Val Gly Lys
545 550 555 560

Glu Arg Leu Ala Ala Ser Gln Leu Glu Tyr Ser Ile Arg Leu Asp Gln
565 570 575

Glu Gly Ser Ser Gly Met Glu Val Arg Gly Leu Met Val Ile Lys Gln
580 585 590

Thr Lys Lys Thr Arg Ala Arg Gln Arg Lys Gln Ala Ile Tyr Asn Trp
595 600 605

Lys Thr Ile Gly Arg Lys Val Ile His Thr Ile Asp Lys Val Gly Thr
610 615 620

Glu Gln Ala Val Leu Leu Leu His Gly His Asp Arg Leu Asp Arg Val
625 630 635 640

Tyr Glu Asp His

<210> 20
<211> 635
<212> PRT
<213> drosophila melanogaster

<400> 20

Pro Leu Gly Lys Trp Glu Asp His Lys Ala Cys Trp Gln Met Gln Tyr
1 5 10 15

Arg Gly Ala Leu Gly Glu Ser Leu Leu His Val Leu Ile Ile Cys Asp
20 25 30

Ser Lys Val His Thr Lys Leu Ala Arg Val Leu Leu Arg Val Phe Pro
35 40 45

Asn Leu Ala Leu Asp Val Met Glu Gly Glu Glu Tyr Leu Gly Ala Ser
50 55 60

Ala Leu His Leu Ser Ile Ala Tyr Ser Asn Asn Glu Leu Val Ala Asp
65 70 75 80

Leu Ile Glu Ala Gly Ala Asp Ile His Gln Arg Ala Ile Gly Ser Phe
85 90 95

Phe Leu Pro Arg Asp Gln Gln Arg Ala Asn Tyr Met Gly Glu Tyr Pro
100 105 110

Leu Ala Trp Ala Ala Cys Cys Ala Asn Glu Ser Val Tyr Asn Leu Leu
115 120 125

Val Asp Cys Gly Ser Asp Pro Asp Ala Gln Asp Ser Phe Gly Asn Met
130 135 140

Ile Leu His Met Val Val Cys Asp Lys Leu Asp Met Phe Gly Tyr
145 150 155 160

Ala Leu Arg His Pro Lys Thr Pro Ala Lys Asn Gly Ile Val Asn Gln
165 170 175

Thr Gly Leu Thr Pro Leu Thr Leu Ala Cys Lys Leu Gly Arg Ala Glu
180 185 190

Val Phe Arg Glu Met Leu Glu Leu Ser Ala Arg Glu Phe Trp Arg Tyr
195 200 205

Ser Asn Ile Thr Cys Ser Gly Tyr Pro Leu Asn Ala Leu Asp Thr Leu
210 215 220

Leu Pro Asp Gly Arg Thr Asn Trp Asn Ser Ala Leu Phe Ile Ile Leu
225 230 235 240

Asn Gly Thr Lys Pro Glu His Leu Asp Met Leu Asp Gly Gly Ile Ile
245 250 255

Gln Arg Leu Leu Glu Glu Lys Trp Lys Thr Phe Ala Gln Asn Gln Phe
260 265 270

Leu Lys Arg Leu Leu Ile Leu Ser Thr His Leu Leu Cys Leu Ser Val
275 280 285

Ser Val Tyr Leu Arg Pro Ala His Asp Gly Glu Ala Glu Asp Glu Asp
290 295 300

Ser Glu Gly Ser Asp Ala Ser Ala Ala Leu Leu Thr Leu Val Gly
305 310 315 320

Val Leu Ser Tyr Val Ile Phe Gln Gln Gly Asp Glu Ile Lys Asn Gln
325 330 335

Gly Leu Ser Ala Phe Leu Lys Gln Leu Ser His Ala Pro Ala Lys Ala
340 345 350

Ile Phe Leu Phe Ser Asn Leu Leu Ile Leu Ala Cys Ile Pro Phe Arg
355 360 365

Leu Ile Gly Asp Thr Asp Thr Glu Glu Ala Ile Leu Ile Phe Ala Val
370 375 380

Pro Gly Ser Trp Phe Leu Leu Met Phe Phe Ala Gly Ala Ile Arg Leu
385 390 395 400

Thr Gly Pro Phe Val Thr Met Ile Tyr Ser Met Ile Thr Gly Asp Met
405 410 415

Phe Thr Phe Gly Ile Ile Tyr Cys Ile Val Leu Cys Gly Phe Ser Gln
420 425 430

Ala Phe Tyr Phe Leu Tyr Lys Gly His Pro Gln Val Gln Ser Thr Met
435 440 445

Phe Asn Thr Tyr Thr Ser Thr Trp Met Ala Leu Phe Gln Thr Thr Leu
450 455 460

Gly Asp Tyr Asn Tyr Pro Asp Leu Asn Gln Thr Thr Tyr Pro Asn Leu
465 470 475 480

Ser Lys Thr Val Phe Val Ile Phe Met Ile Phe Val Pro Ile Leu Leu
485 490 495

Leu Asn Met Leu Ile Ala Met Met Gly Asn Thr Tyr Val Thr Val Ile
500 505 510

Glu Gln Ser Glu Lys Glu Trp Met Lys Gln Trp Ala Lys Ile Val Val
515 520 525

Thr Leu Glu Arg Ala Val Pro Gln Ala Asp Ala Lys Gly Tyr Leu Glu
530 535 540

Ala Tyr Ser Ile Pro Leu Gly Pro Ser Asp Asp Ser Gly Phe Glu Val
545 550 555 560

Arg Gly Val Met Val Ile Lys Ser Lys Ser Lys Thr Arg Ala Lys Gln
565 570 575

Arg Lys Gly Ala Val Ser Asn Trp Lys Arg Val Gly Arg Val Thr Leu
580 585 590

Thr Ala Leu Lys Lys Arg Gly Met Thr Gly Glu Glu Met Arg Arg Leu
595 600 605

Met Trp Gly Arg Ala Ser Ile Ser Ser Pro Val Lys Val Thr Lys Gln
610 615 620

Lys Leu Lys Asp Pro Tyr Asn Leu His Thr Asp
625 630 635